

## Update

Ministry

Treasury Board and Finance

### Describe: Basic Job Details

#### Position

Position ID

Position Name (200 character maximum)

Business Intelligence Analyst

Current Class

Program Services 4

Job Focus

Operations/Program

Supervisory Level

Agency (ministry) code

Cost Centre

Program Code: (enter if required)

#### Employee

Employee Name (or Vacant)

#### Organizational Structure

Division, Branch/Unit

TRA, SCS/Business Planning and Integration

Current organizational chart attached?

Supervisor's Position ID

Supervisor's Position Name (30 characters)

Supervisor's Current Class

### Design: Identify Job Duties and Value

#### Changes Since Last Reviewed

Date yyyy-mm-dd

Responsibilities Added:

Modified responsibilities to extend analytics to include the use of AI/ML applications, methodologies, technologies and tools.

Responsibilities Removed:

## Job Purpose and Organizational Context

Why the job exists:

The Tax and Revenue Business Intelligence Analyst (Analyst) provides expertise and leads business intelligence for the division of Tax and Revenue Administration (TRA) in the Ministry of Treasury Board and Finance (TBF). Work conducted by the position directly contributes to the improvement to revenue management in the Government of Alberta. The incumbent uses their extensive experience with different analytics tools and methods to support evidence based decision making and tax and revenue planning for the Government of Alberta. This position supports the evolving functionality and utility of business intelligence and reports to meet changing user needs by coordinating resources and establishing and maintaining effective liaison and working relationships with a variety of management, staff, and stakeholders with competing priorities.

The Analyst develops and maintains business intelligence applications and tools and supports report generation for major programs and program areas. This includes coordinating, developing, and implementing initiatives and projects required for program administration and data analysis.

The Analyst defines data, identifies patterns and emerging trends from the relationships between unstructured data; external structured data; and TRA's structured datasets; develops purposeful reports and a revenue reporting dashboard for senior management, the Assistant Deputy Minister and Deputy Minister. The Analyst will also collaborate with subject matter experts in TRA and Senior Policy Analysts in TBF's Economic and Fiscal Policy group and other internal stakeholders to develop meaningful information, purposeful reports and datasets. The application of advanced analytics allows for improved decision making and enhances TRA's tactical and strategic business processes. This will directly impact the government of Alberta and Albertans by ensuring that tax leakage is minimized, taxpayer compliance is maximized; and that reporting for actively managed revenue is timely.

## Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

1. Provides expertise and leadership in the design, delivery and oversight of AI/ML-enabled data analytics projects and initiatives.
  - Conducts complex, cross-team business intelligence analysis and data science projects, providing expert input into project planning sessions, developing project proposals, scope definition, specifying project deliverables, business case preparation, identifying milestones and resource requirements, monitoring project progress, and providing progress reports.
  - Leads the division's approach to modeling complex business problems, conducting large scale experimentation, discovering business insights and identifying opportunities using AI/ML, statistical, algorithmic, data mining and visualization techniques, including automated, reproducible, and scalable data pipelines and work flows.
  - Applies advanced data management and specialized analytic methods to support innovative and effective approaches to solve complex analytic problems with multiple data types, large-scale datasets, and diverse data sources.
  - Develops processes, tools, and controls to monitor and analyze model performance, data accuracy, data drift, and analytical reliability across production and per-production environments.
  - Make strategic recommendations on data collection, ingestion, integration and retention requirements ensuring solutions incorporate business requirements, privacy and legal considerations, data governance principles, and industry best practices for analytics and AI/ML.
  - Identify data analytics and AI/ML-related risks, including data quality, bias, model reliability, scalability, and compliance risks, and implements appropriate mitigation strategies.
2. Develops AI/ML-enabled data models and analytical products to support advanced analytics and decision making initiatives.
  - Applies a broad range data science and machine learning techniques including time series modeling, unsupervised learning, supervised learning, and classic regression to generate predictive and prescriptive insights from financial and customer data sets.
  - Collects, evaluates and prepares data while researching and applying emerging AI/ML methodologies and

tools to enhance statistical learning models and analytical outcomes.

- Provide expert advice and leads engagement with subject matter experts to translate business needs into AI/ML and analytics requirements ensuring alignment with expected outcomes and value realization.
- Identify relevance, availability and integrity, and suitability of data sources for AI/ML modeling, analytics and automations use cases.
- Gather, understand and document data requirements using appropriate tools and techniques.
- Designs, plans, validates data and model requirements, and develops statistical models, machine learning algorithms and analytical methods, selecting approaches that balance performance, interpretability, and operational feasibility.
- Implement analytics and AI/ML methodologies, including model training, testing and statistical analysis in order to test hypotheses and generate actionable insights.
- Manages quality, transformation and integration pipelines, and creates detailed and comprehensive model and data documentation that meets industry, governance, and reproducibility standards.
- Creates and maintains a TRA data dictionary that is aligned with industry best practices and provides TRA with a documented and detailed understanding of its data assets used in analytics and AI/ML solutions.

3. Modifies, enhances and executes complex statistical and machine learning models for the continuous improvement of analytics and AI/ML capabilities and performance to support stakeholder information needs.

- Identify gaps in client information products, data availability, and analytical capabilities and supports the design and adoption of appropriate AI/ML models, methods, and processes to address those gaps.
- Remains current through environmental scans, research, and experimentation on best practices, emerging techniques, tools and trends to support the divisions ongoing adoption and maturation of advanced analytics.
- Represents the division at cross-government working groups and committees to provide input on analytical, AI/ML, and data-driven initiatives as needed.

4. Presentation of results, models and analysis to business stakeholders and GoA Ministries.

- Interprets data to discover solutions, opportunities and present findings to management by utilizing data visualization and other means to meet the information needs of TRA and its stakeholders.
- Provides accurate, visual and dynamic reports that are used to compare, correlate and forecast.
- Supports the development and management of reporting, business intelligence and dashboard approaches, solutions and tools that support data governance and management goals.
- Address concerns to enhance end-users' understanding of results
- Develop/ collaborate on production of reports, communication materials, seminars/ workshops and training.
- Address disclosure control and confidentiality issues prior to publication of analytical products.

## Problem Solving

Typical problems solved:

The work environment is evolving and multi-faceted, requiring extensive knowledge, significant flexibility, professional judgment, and understanding of complex issues. The Analyst applies creativity and originality to responsibilities, often there is minimal precedent to guide activities therefore the Analyst integrates a variety of requirements and perspectives when applying data analysis and AI/ML-related expertise to the evaluation, development, and implementation of the solutions.

The Analyst is delegated considerable independence to exercise judgment when providing advice and consultation to clients and stakeholders. The Analyst develops and reviews project deliverables, strategies, work plans, schedules estimates and implementation plans and resolves and escalates issues which affect overall progress and the quality of the data project.

The Analyst will work within multiple program area and use subject matter expertise and judgment to determine the best approach and methodology to use for analytics projects. This includes participating in all aspects of the project life-cycle, including collecting and analyzing information, building models, and presenting results. The size and scope of each project/ initiative are diverse. The Analyst works with and/ or collects information from individuals at a variety of organization levels across the GoA and is a critical link

between TRA and the department of Technology and Innovation, to define and clarify requirements, implications, and opportunities associated with TRA's data and external data sources.

Types of guidance available for problem solving:

The Analyst drives the implementation and integration of data analytics within TRA and associated program areas. Using their experience and knowledge of big data, descriptive analytics, prescriptive analytics and AI techniques across multiple technology platforms and multiple data sources to solve complex problems. With minimal guidance from the Manager, the Analyst will solve a variety of problems related to data analytics and AI and is responsible for helping to assess the feasibility of proposed initiatives/ projects.

Issues involved are often unique in nature with limited precedence to be found within the ministry. The analyst will refer to GoA data and AI standards, guidelines, and templates and may rely on expertise of other subject matter experts as needed. The Analyst will also refer to industry collaboration sites, vendor services, and network connections in the industry as needed.

Direct or indirect impacts of decisions:

Decisions made by the Analyst will impact the scope, approach, complexity and feasibility of analytics projects and other initiatives executed by the divisions. The stakeholders affected will vary depending on the project/ initiative.

### Key Relationships

Major stakeholders and purpose of interactions:

Ministry and Branch Management - provide analytical recommendations and expertise as needed to the Director; support divisional activities; participated in the prioritization of analytical projects and associated resourcing; identify opportunities for potential analytics projects and potential improvements to existing approaches, methods, etc.

Other divisional and ministry staff - Provide guidance and training; coordinate and collaborate on analytic projects; discuss pertinent data and analytics issues.

### Required Education, Experience and Technical Competencies

Education Level

Bachelor's Degree (4 year)

Focus/Major

Other

2nd Major/Minor if applicable

Other

Designation

Other

If other, specify:

Business Administration, Statistics, Mathematics, Data Science, Engineering, or related field

Job-specific experience, technical competencies, certification and/or training:

The position requires a university degree in Business Administration, Engineering, Statistics, Mathematics, Computer Science or a related field. Minimum of four (4) years of experience:

- At least 1 year of experience as a data scientist
- At least 2 years of experience in data analytics
- At least 2 years of experience with predictive analytics, statistical techniques and developing data models

Related experience must include:

- Experience designing and delivering business intelligence and analytical solutions (e.g., dynamic reports in Power BI, Tableau, or similar), with integration of AI-driven or predictive insights where appropriate.
- Experience with relational and analytical data modeling including enterprise databases and semantic models (e.g., Oracle, SQL Server, SSAS, or similar technologies) to support analytics and AI/ML workloads.
- Experience using analytical, statistical and programming languages (e.g., SQL, Python, R, SAS, DAX) to extract, transform, analyze, and prepare data for analytics and machine learning applications.
- Experience creating executive-level presentations that communicate analytical findings, model insights, risks, and recommendations to support evidence-based decision making.

Knowledge, Skills and Abilities:

- Knowledge of data analytics, data science and machine learning approaches, including complex statistical modeling, supervised and unsupervised learning, and predictive analytics techniques.
- Advanced knowledge of data management methods, data mining, statistical analysis, optimization techniques, and applied analytical methods, including network optimization or other similar advanced

methods.

- Understanding of data structures, feature engineering, and data transformation techniques used in analytics and AI/ML pipelines.
- Knowledge of advanced statistical techniques and concepts (regressions, properties of distribution, statistical tests and proper usage, etc) and experience with applications.
- Experience with data processing, database systems, and computer programming to support scalable analytics and AI/ML solutions.
- Ability to design and develop business intelligence reports, dashboards and analytical products, including those that incorporate predictive or AI-driven insights.
- Strong technical, analytic skills and experience with database design, extraction languages and analytical programming environments.
- Familiarity with Protection of Privacy Act (POPA) and other data privacy considerations particularly as they related to analytics and AI/ML use cases.

Project Management is an important aspect of this position and will include developing, and communicating accurate project charters, plans, issues and concerns, risks, and other project information as needed. The Analyst has project management experience and education so they can translate business requirements into systems solutions and ensure deliverables relating to data management and data reporting projects are completed as planned.

Excellent interpersonal skills, relationship management and communication skills, including the ability to consult, and negotiate with TRA staff (subject matter experts and senior management), and communicate directions to drive innovation within an established organization.

Excellent written, verbal and listening skills, including ability to communicate effectively with individuals having varying degrees of expertise with business process design and improvement, deliver training and information sessions, and develop and present information to a variety of audiences. Demonstrated ability to work and communicate effectively at all levels of the organization and remain open to new perspectives, respond effectively to changing business requirements, and have a commitment to confidentiality, discretion, and diplomacy.

**Behavioral Competencies**

Pick 4-5 representative behavioral competencies and their level.

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Systems Thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Shapes APS goals with a view of entire network: <ul style="list-style-type: none"> <li>• Considers whole system and links; sets goals for long-term outcomes and broad perspectives</li> <li>• Evaluates short, medium, and long-term impacts to inform progress</li> <li>• Shapes organization to meet client needs; helps others see their role in this</li> </ul>	The Analyst will need to consider the whole system, take a broad perspective and evaluate impacts when determining the best approaches, methodologies and solutions for analytical projects.
Creative Problem Solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Works in open teams to share ideas and process issues: <ul style="list-style-type: none"> <li>• Uses wide range of techniques to break down problems</li> </ul>	The Analyst will need to take a creative and innovative approach to problem solving when assessing feasibility of and executing on

		<ul style="list-style-type: none"> <li>• Allows others to think creatively and voice ideas</li> <li>• Brings the right people together to solve issues</li> <li>• Identifies new solutions for the organization</li> </ul>	analytics projects. Hypothesis testing requires innovative and creative approach to problem solving.
Agility	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>Proactively incorporates change into processes:</p> <ul style="list-style-type: none"> <li>• Creates opportunities for improvement</li> <li>• Is aware of and adapts to changing priorities</li> <li>• Remains objective under pressure and supports others to manage their emotions</li> <li>• Proactively explains impact of change on roles, and integrates change in existing work</li> <li>• Readily adapts plans and practices</li> </ul>	The Analyst will need to adapt quickly to changing priorities and incorporate agile practices to ensure successful outcomes for analytics projects. The Analyst will also need to be respond well to change and support others through change.
Drive for Results	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>Works to remove barriers to outcomes, sticking to principles:</p> <ul style="list-style-type: none"> <li>• Forecasts and proactively addresses project challenges</li> <li>• Removes barriers to collaboration and achievement of outcomes</li> <li>• Upholds principles and confronts problems directly</li> <li>• Considers complex factors and aligns solutions with broader organization mission</li> </ul>	The Analyst will need to proactively identify, address and help mitigate challenges for analytics projects while aligning solutions to broader GoA initiatives.

**Benchmarks**

List 1-2 potential comparable Government of Alberta: [Benchmark](#)

**Assign**

The signatures below indicate that all parties have read and agree that the job description accurately reflects the work assigned and required in the organization.

\_\_\_\_\_  
Employee Name

\_\_\_\_\_  
Date yyyy-mm-dd

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Employee Signature

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Supervisor / Manager Name

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Date yyyy-mm-dd

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Supervisor / Manager Signature

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Director / Executive Director Name

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Date yyyy-mm-dd

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Director / Executive Director Signature

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ADM Name

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